

THE INTERNATIONAL COUNCIL OF NURSES

(Continued from page 970)

AFTERNOON SESSION

II.—Education

THE remainder of the afternoon session was devoted to the subject of education—to the definition of a theoretical and practical curriculum of education and a minimum standard qualifying for registration as a trained nurse.

The president, Mrs. Bedford Fenwick, invited Miss Goodrich, superintendent of the Training-School for Nurses, New York Hospital, and delegate to the council of the American Society of Superintendents, to read the paper prepared by Miss Nutting, superintendent of the Johns Hopkins Hospital Training-School for Nurses, Baltimore.

Mrs. Fenwick said, as time was so limited, one day having proved quite insufficient in which to read and consider many excellent reports and papers presented to the council, she would suggest that Miss Nutting's paper be taken as the basis of the afternoon's discussion, the remaining papers to be printed in the transactions of the meeting.

Miss Goodrich said she greatly regretted that so splendid a paper as that she would have the honor of reading was not to be presented by the writer in person.

SUGGESTIONS FOR EDUCATIONAL STANDARDS FOR STATE REGISTRATION

By MISS M. ADELAIDE NUTTING

In asking the State to establish and maintain definite standards of education for nurses, we call upon her to look carefully into the whole system of nursing education, to inquire not only into the nature and extent of the professional education offered by training-schools, but also into the qualifications and preliminary education presented by candidates for admission to such schools. For it may be laid down as a fundamental proposition in considering this subject that, no matter how complete and thorough a professional training may be offered, it is of limited or doubtful utility unless given to those prepared by previous education to profit to the fullest degree by it.

The requirements for entrance to training-schools, therefore, compel our attention at the outset to any suggestions which may be made as to educational standards for State registration.

Certain points which are little considered among the requirements in other branches of education—namely, age, height, size, physical condition, freedom from family ties, etc.—have long taken a place of relatively high importance in weighing the merits of applicants for admission to training-schools. In reference to the *one indispensable* require-

ment for all other kinds of education, academic or professional, that is, a suitable preliminary education, the training-school for nurses has been singularly unexacting. Indeed, its doors have been hospitably held open to applicants conspicuously deficient in this respect, and it is well to consider just here some of the reasons why the requirements in this particular should not be higher and more rigorously applied.

It is well known that many people, among them doctors, and even the heads of some training-schools, still honestly believe that it is not only not necessary, but undesirable, that nurses should be educated women. It is equally well known that many highly educated women are attracted to the work, yet they shrink from the long hours, arduous labor, and severe discipline which the training includes, especially when it is clear that little in the way of systematic, suitable instruction of a truly educational character accompanies it. What is perhaps not so well known is the fact that it is exceedingly difficult to set up standards of any kind and maintain them unflinchingly while the arbitrary conditions of the hospital in which the practical work is done require a certain definite number of students to carry on its work. An enormous mass of work must be accomplished daily by students only in any hospital in which a training-school is established, and, whether the students are well qualified or not, they cannot be permitted to fall in number below a certain specified limit, or they will prove insufficient for the needs of the hospital. It is easy to see that under these conditions it is impossible to reject beyond a certain point, even when there is a full realization on the part of the superintendent of the training-school that some of those permitted to remain are far below the standard which she would like to maintain, and are unpromising material out of which to try to develop satisfactory results. These students are kept because, even though poor, they are the best at the moment available, and the product of their activity as students is necessary to the maintenance of the hospital.

The ways by which the educational requirements for admission can be improved and brought to the right standard are, first, by an improvement in the schools themselves. The fact that in schools where the teaching is known to be excellent, the opportunities liberal, and the conditions of life wholesome the number of applicants well prepared by previous education grows larger each year points conclusively a way to advances in this direction.

And when, in addition to such reforms, provision is made in hospitals generally for a body of students which will constitute a nursing staff large enough to allow for a very rigid system of sifting and selection, not only at the close of the probationary period, but also, perhaps, at the close of each school year, there will be a marked improvement in the educational

status of those finally graduated, and less waste of the resources of the institution upon incompetent persons.

Professional training has been described as the very last stage of education, and though true education is always incomplete in every good system of teaching, new knowledge to be of value must be based upon that which has preceded it. Certainly no worthy superstructure can ever be built on weak and unstable foundations. In seeking to decide just what foundations are safe and suitable upon which to build a professional education, we find that standards vary greatly in different countries, and even in different parts of the same country; but an approximately safe standard, so far as America is concerned, for entrance requirements to training-schools is that of High School graduation. The High School stands between the public school and the college, and affords a sound training in the fundamental English branches—a definite knowledge of mathematics, of history, ancient and modern, of literature, and of some language. A full course covers four years, and one who at eighteen or nineteen years of age has graduated from a good High School should have acquired not only knowledge, but habits of observation, accuracy, and thoroughness; above all, she should bring to further her work the earnestness of the student. If we are right in contending for a professional status for nursing, then those unprepared by some such study as is here outlined may be said to be absolutely unqualified to undertake the study of nursing. Concerning the other entrance requirements, a word should be said. While in England the medical profession is engaged in deciding whether or not a candidate for entrance to a medical school shall be sixteen or seventeen years of age, we stretch the matter rather far in the other direction by insisting upon twenty-three or twenty-five as the lowest age limit. Age is often a matter of circumstances rather than years: the way in which those years have been spent, the responsibilities they have brought, rather than their number, tell the story, and frequently prove a more correct guide in helping to decide as to the fitness of an applicant. The ground has been taken that at about twenty-three years of age a woman becomes more settled in purpose and apt to view life more seriously; but the writer's experience would go far to show that "Follies do not cease with youth," and the troublesome students in training-schools are as likely to be thirty years of age as twenty. While it may be advisable (though it hardly seems compatible with the most liberal education) to set a fixed and unalterable age limit, it would seem as if we might with wisdom place it a year or two earlier than the present standard. There is another side to the question too seldom considered. The high age limit of admission cuts short by just so much the total period of professional activity, already limited by the exacting nature of the

physical demands made upon those engaged in it—their irregular hours for sleep and food, excessively long hours of duty, and their great anxieties and grave responsibilities. Add to this the fact that in most branches of professional work the tendency seems to be to give the preference to the younger, stronger, and more vigorous candidates for positions, and you have a reasonable argument against a very high age limit. The physical fitness of the applicant should be settled by rigid examinations, conducted not by the careless, kindly family physician, anxious to assist some young *protégée* to a remunerative occupation, or to provide a cure for a troublesome patient suffering from lack of an object in life, but by a physician of the institution authorized to conduct such examinations. The most searching scrutiny should be made into the moral fitness of the applicant. We know that no women but those who are honorable and scrupulous should be permitted to enter upon the study of a profession entailing such peculiarly grave responsibilities upon those who practise it. We know that nurses must be women of absolutely fireproof character. It is difficult, however, to suggest any measures which will bring satisfactory and reliable assurances upon this point beyond those which are ordinarily employed in training-schools. Letters from clergymen and others may mean much or little, and the best results are obtained from careful personal inquiry when that can be instituted. It is possible that a higher standard of education in admission requirements may prove helpful in settling to some degree this difficult and delicate matter, and that a long, severe, and exacting course of study may assist in rendering the work undesirable except to earnest, high-minded women.

Assuming, then, that we have a candidate whose education will correspond to some established standard, such, for instance, as a High School graduation certificate; of age not below a safe limit, say twenty years, but determined somewhat by education, opportunities, and environment; of physical fitness decided by careful physical examination from medical men of known competence and impartial judgment; of moral fitness satisfied by searching inquiry—what shall be the nature of her professional education? What shall be the length of the full course, the number of hours of work and study daily? What subjects shall be taught, and what length of time shall be devoted to each? How shall the time devoted to practice and theory be apportioned, and how shall such instruction be given? The length of the course of study in training-schools, beginning in 1860 at one year, has grown from one to two years, and within the last decade very rapidly has lengthened into three years, until now most leading hospitals have adopted that term, and it has come to be pretty generally accepted as a proper period for the full course of training. It has been found difficult to teach fully the number of required

subjects in less time, but, in the opinion of the writer, three years is the maximum period which should be set when we bear in mind that three years of work and study in a hospital training-school equal, if they do not exceed, in point of time a four-years' college course. Each year in college is about eight months in length, and the full four years of college work means about thirty-two months of study. Each year of a hospital training-school is never less than eleven months, in which not one day, even Sunday, is free. There are no Christmas vacations, no Easter holidays, and summer vacations are usually limited to three, or sometimes two, weeks, and the result is that the student gives to acquire her profession more than the equivalent in time of a four-years' college course. A four-years' course of training-school work, judged by other scholastic standards, actually means five years of work and study, and is beyond the limits of time necessary for proper training in general nursing. In those instances where every portion of each year is fully and properly utilized, where the work and study are systematic and carefully graded, there is in three years, exclusive, possibly, of a preparatory term, abundant time for a full course of instruction, and an added year seems but a confession of weakness either in the methods or material of the school or in the qualities of the students.

If in a large general hospital students are left month after month in certain departments because they have become expert in the duties belonging to those departments, and it is easier to keep them there than to change and teach the duties to a new student, the chances are that the end of three years will find many with an ill-balanced training and total ignorance of some subjects. The same possibly might be true at the end of six years.

A nurse may pass from ward to ward and spend the greater portion of her time in giving medicines and taking temperatures, merely because she knows how, unless the closest watchfulness is exercised. Where the material for teaching is limited and fails to meet certain requirements which will be specified later in this paper, there is no call to establish a three-years' course of training. The number of hours to be devoted to practical work in the hospital wards is a matter of first importance in planning a course of instruction. It is practically useless to provide elaborate schedules of study consisting of classes, lectures, demonstrations, etc., unless the pupils can go to those classes in a fit physical condition to profit by such instruction, and it is generally conceded in other educational institutions that any instruction given after five o'clock in the afternoon is more or less wasted effort. I think I am right in assuming that lectures in the evening and classes in the late afternoon are so universal in training-schools as to form the rule; that students attend

those classes who have risen at six A.M. or even earlier, and have from that time on, a period of from eight to ten hours, been engaged in active physical effort; that they commonly enter the class-room in a condition of physical fatigue which forbids any real mental effort. Neither the willingness or the enthusiasm of the student, nor the interest or the excellence of the subject and its manner of presentation, can arouse to fruitful activity minds so influenced or controlled by physical state.

In a study of working hours in representative schools, made a few years ago, I found the average number of hours of practical work daily in hospital wards to be ten and a half. Is it not folly to expect good results from even the best teaching under such conditions? Eight hours of practical work should be the limit of time required of students throughout the general term of the three-years' course. In certain departments, such as operating-rooms or maternity wards, it is sometimes impossible to regulate the hours, but the term of service in such departments is usually brief, and does not affect the main system. To eight hours of practical work two hours may be added daily for theory in some form, either lecture, class, or study, thus forming a ten-hour working day. And every effort should be made to bring the instruction into the earlier hours of the day, and to do away with evening classes and lectures as a rule.

Using these hours as a basis for our curriculum, we have:

Practical work in wards and other departments: daily, eight hours; weekly, fifty-six hours.

Theoretical work, classes, lectures, laboratory: daily (Sunday omitted), two hours; weekly, twelve hours. Such an arrangement forms a fair working basis.

The direct object of the training-school being the preparation of women for the care of the sick of the community, no matter what forms of disease they may be suffering from, it is clear that the subjects upon which instruction is given must be such as will fulfil the object. What may be called the four great branches of nursing are the fundamentals of a good nursing education and an indispensable requirement of a training-school. Every student should be thoroughly grounded in the care of medical, surgical, gynecological, and obstetrical patients, and any school finding itself lacking in ability to teach properly any one of these subjects should either provide opportunities for its students to obtain such needed instruction in some other hospital or school, or cut short the term of instruction if that has been placed at three years.

To these four subjects should be added the care of children, in view of the place in medicine which this subject takes. There is a growing appreciation of its importance from a nursing stand-point, and of the necessity for including it in a general course of training. The prac-

tical training in these five great subjects forms the major part of the whole course of instruction, and should consist of systematic and continuous bedside teaching, which may be carried on by instructors especially prepared and provided for that purpose. Nothing can take the place of this kind of instruction, and the whole function of lectures, classes, and demonstrations is merely preparatory or supplementary. The main body of teaching should always be at the bedside, and that should be done in a far more thorough and comprehensive way than is now generally the case. It may be the province of the assistant to the superintendent, or of the head nurse of the ward, or of special instructors. In those hospitals where the service is very acute and active, or where a medical school is attached, it is often impossible for either head nurses or assistants to give such teaching, and an instructor provided for the purpose carries the work forward systematically and to better advantage.

It has been customary in training-schools to place the pupils at once on duty in the hospital wards. Here it was expected that they should perform the simple duties of bed-making, dusting, cleaning, etc., to advance them to the more responsible duties concerning patients at the very earliest possible moment—to utilize them, in fact, for the needs of the hospital work as rapidly as their apparent progress made it safe to do so. I say apparent progress, because real progress is not possible where pupils are forced rapidly along to the performance of acts which they do not understand; the valuable opportunities for instruction such acts should afford are almost wholly lost to them when they have not been in some way prepared by previous instruction. It is true of nursing schools, as of other professional schools, that to be of the greatest value to the students the course of study should be preceded by carefully planned instruction in subjects which are strictly fundamental. The subjects which may be clearly recognized as such here are anatomy and physiology, household economics (which represent a study of foods and their preparation, hygiene, and sanitation), *materia medica*, and the elements of nursing.

A pupil who enters the hospital wards prepared by a thorough teaching in these subjects within certain naturally defined limits brings at once intelligence to bear upon the processes of her work. She can understand what she sees and handles, and can profit by matters which without such teaching would pass by unnoticed. Preparatory training of some such nature as is outlined above has been planned as a matter of experiment in certain directions for the past few years, and definitely established as a part of the course of instruction in several leading hospitals both in England and America.

It varies as greatly in length and in the handling of its subjects as the general training of nurses varies, and nothing under the name of education exhibits a more interesting and manifold variety of standards than the latter.

Such preparatory courses may cover a period of six weeks, three months, six months, or even one year. They may include the subjects named on a previous page, or the whole instruction for the three years may be crowded into three months. They are in some instances so arranged that the instruction is carried on largely in the wards, in others in certain departments outside of the wards, and, again, in technical schools having no relation whatever to the hospital.

Still further, they may be established in a separate building belonging, perhaps, to the hospital, provided and equipped for use as a preparatory department. This method is immeasurably superior to any other, and may be considered an ideal way of maintaining such a course of study. What is of interest and value to us is the growing recognition of the fact that some such preparatory instruction is necessary, and the rapidly increasing number of attempts which are being made under many difficulties to provide it. Whatever form this instruction may ultimately take, it may now be reasonably looked upon as a necessary part of a good education in nursing. It should include a prescribed course of study and practical work, of which a suggested outline is presented. The subjects presented should be—

Household Science.

Anatomy and Physiology.

Materia Medica.

Elements of Nursing.

The practical work should occupy about six hours daily, which will leave three to four hours for theoretical instruction in subjects which it will be observed have hitherto occupied largely the time devoted to theory during the entire junior year.

HOUSEHOLD ECONOMICS.

In household economics the various subjects must be handled and taught in a large degree practically. Some departments of the hospital where the work desired as a means of instruction is carried on daily may be chosen, and pupils may be detailed for duty there under an instructor precisely as in a hospital ward.

The nurses' home, under some circumstances, forms a good field for this teaching, especially in handling the subject of foods and their preparation, providing, as it does, two breakfasts, two dinners, and two suppers. The private wards, if such exist, or even a general hospital kitchen,

may be utilized for the study of foods and their nutritive values, their cost and care, and their use and preparation for various forms of disease. In the same way may be taught the principles and methods of ventilation and heating, of plumbing and drainage, and other matters which, under the general term of hygiene, relate to the care and maintenance of a healthful household. The practical handling of the affairs of the household, which lies always at the foundation of good nursing, should be sufficiently taught, and, lacking a separate building for the purpose, it is quite possible to appropriate from existing opportunities in the daily work of various departments of the hospital such material as will prepare the students in these fundamental branches.

In the study of foods there should be a series of classes, combined with the practical work, taking up first the chemistry of foods, and afterwards studying food values and diets in various diseases.

ANATOMY AND PHYSIOLOGY.

The courses in anatomy and physiology should be systematic and thorough as far as they go, and should consist of recitations and demonstrations, laboratory work, and lectures. An excellent method of teaching these subjects for our purposes, where every step of new knowledge depends so closely on some preceding step, is through a short term, covering a period of, say, twelve weeks, occupying, say, six hours weekly. A good working schedule for handling this subject in this way may be arranged thus:

Recitations one and a half hours once a week, lectures one hour once a week. The recitations follow the usual form, and are as valuable here when properly conducted as in the other subjects. In the laboratory work the student is brought into direct contact with the subject of her study, and handles tissues and specimens, makes crude dissections, and uses the microscope. By means of one lecture weekly the instructor explains such points as have presented special difficulties.

MATERIA MEDICA.

This subject may be taught entirely by means of recitations and a few class demonstrations, or it may be partially taught in the hospital pharmacy and the practical instruction obtained there supplemented by class teaching. In the pharmacy a group of students (three to four) may be placed on duty, say two hours each morning for a period of four weeks. There they learn under instruction the preparation of all drugs in daily use in the hospital. They become familiar with various forms of drugs, learn their cost and the influences under which they deteriorate. They are taught accurate weighing and measuring and careful handling.

In a series of classes which should follow this practical work instruction should be given concerning the methods of administering drugs and the observations of their effects, also of poisons and their proper antidotes.

THE ELEMENTS OF NURSING.

This course of instruction would cover some such ground as is here outlined: Beds and methods of bedmaking; changing of linen and moving and managing of helpless patients; the use of appliances for the relief of bed-patients.

The daily care of bed-patients and methods of bathing, tub and sweat baths, sponges and packs. External application (hot and cold), the use of hot-water bags, fomentations, poultices, plasters, liniments, etc., ice and cold compresses.

Preparation for enemata, catheterization, douches, irrigations, with instructions as to purpose and methods of administering. Methods of taking temperature, pulse, and respiration of patients, of accuracy in keeping charts and other bedside records, taking notes, and making reports.

The use and care of ward appliances and utensils, concluding with a series of classes in bandaging.

Two hours weekly for twelve weeks would enable an instructor to cover this ground quite satisfactorily in a careful even if rudimentary way, so that on entering the ward the student is familiar to some degree with her surroundings, and may be safely entrusted to perform the simpler tasks and to meet the less urgent requirements of her patients. The subject of hygiene is exceedingly important, and should be thoroughly and practically taught. It should deal with the proper air supply and temperature of sick-rooms, showing methods of ventilating and heating; with water supply, how contaminated, how purified; with disposal of excreta and other waste matter; methods of disinfection of rooms and clothing; of the general causes of disease and methods of prevention, and with the personal regimen which should govern a healthy life.

In a course of six or eight lectures or classes, including practical demonstrations, and supplemented by visits to buildings where various methods of heating, ventilating, etc., can be shown, the student can obtain a fair working knowledge of this subject, which will serve as a basis for future study in this direction. Emphasis has been already laid on the advantages which such a course of preparatory instruction offers over the usual method, which permits the student to enter the hospital ward so unprepared that she becomes an unskilled and unintelligent performer of duties which are almost, if not quite, meaningless to her—so unprepared that for many months she profits little by the excellent opportunities which the ward offers.

By the general character of her work throughout the entire preparatory period, by practical tests at intervals, and by means of written and oral examinations at its close, the ability of the student to proceed further can be readily determined, and the opportunity for careful observation and study of her personal characteristics during the more prolonged probationary period proves invaluable as an aid in deciding the question of personal fitness. The student so prepared and equipped by definite instruction in subjects directly fundamental may now enter the hospital wards and proceed at once with training in the actual care of the sick. On a previous page have been named the subjects in which she should receive careful, thorough, systematic instruction. I repeat that the standards for registration should require a definite training in the care of medical, surgical, gynæcological, and obstetrical patients. As to the length of time which shall be devoted to each subject, it is quite impossible to set any arbitrary limits. The different services in any hospital may vary widely in the opportunities they present for instruction, either as a general rule or at different seasons of the year; they cannot be made to conform to any course of instruction. In a medical ward, for instance, during what is known as the typhoid-fever season, a nurse may obtain a better practical knowledge and experience in two months than in double the time at another period of the year. Almost invariably some one or two services are larger and more acute than the others. One hospital may provide an excellent service in general surgery, while in another gynæcology may be much the more important. Three months of medical training in one hospital often mean a totally different matter from three months of such training in another. It is reasonable to assume, therefore, that the length of time devoted to each subject should be a matter of adjustment in a certain degree in each institution. Where a particular service is weak it is evident that a longer time is needed in order that the student may become efficient in that particular branch of work. As a rough working outline, subject to such modification and expansion as each hospital may find necessary, I would suggest: Medical training, one year; surgical training, one year; obstetrics, three months; operating-rooms, three months; total, two and a half years.

If this term is added to a six-months' preparatory training the three year are thus filled. Under the head of medical training may be included the nursing of all ordinary medical diseases, the infectious and contagious diseases, some nervous disorders, and the care of children.

The year devoted to surgical training should include the care of patients before and after all varieties of general surgical operations, of gynæcological operations, and also of patients suffering from orthopædic

troubles. Approximately, the time devoted to each branch of surgical service would then be about six months. I repeat that this time allotment is suggestive only, and must be subject to such slight variations as the unequal services of different hospitals render necessary.

As to methods of teaching and training, stress has already been laid upon what seems to me to constitute the main feature of a proper system. Nursing involves the acquirement of two things—knowledge and technical skill. The skill is the art which is taught by one, the teacher, and acquired by the other, the pupil. It can be taught at one place only—the bedside. There is the true place for the teaching of nursing. There only can be taught the accurate observation which lets no faint shadow of change in a patient pass unnoticed; the skilful handling, the sure touch which brings relief, comfort, and confidence; the thoughtful foresight which anticipates and provides for needs which cannot be expressed; the exact recording of facts and conditions which enables the physician to draw proper inferences and conclusions and keeps him in command of the situation. These can never be taught anywhere but over the patient and under the eye, the constant personal supervision and criticism, of the teacher. No good nurse was ever made in the lecture-room. Lectures have their place, but it is a minor one. They are necessary to cover in a systematic and comprehensive way a certain defined field of instruction. The causes of diseases, the symptoms which they present, the complications and difficulties which may arise, methods of treatment, and the reasons why one thing should be done and not another, form in a general way the subjects which should be handled in the lecture-room. The conference system—that is, the interchange of thought between teacher and students—should be used freely.

The apportionment of subjects for the different years, the grading, so that the student is carried forward from one subject to another in a systematic, orderly, and logical manner, is much more easily arranged in the theoretical instruction than in the practical. We cannot say that medical training should come first and gynecological should follow, because all the patients must be nursed all the time, and each ward must have its quota of younger as well as of older students. In a general way it is advisable to give the solid grounding in the care of medical, surgical, and gynecological patients during the first two years, leaving training in obstetrics, in operating-room procedure, in the care of the nervous, and some special subjects to the senior year. The course of lectures and classes should cover in a systematic and comprehensive way the entire field of nursing work, including such subjects as massage, the analysis of urine, and possibly some others.

By conference between schools, by constant comparison of methods

and results, a definite outline of the essentials which must be taught concerning a given subject, and a definite time allotment necessary for the proper handling of that subject, can in time be reached. It may seem of small importance in the beginning whether a subject is taught in a series of six lectures, or in a series of classes accompanied by demonstrations occupying an hour twice weekly for six weeks; but three years hence it will make all the difference between a nurse who knows that subject and one who does not.

To go further into detail concerning any of the subjects mentioned would be to transgress still further the time limit set for this paper. I have not found myself able to adhere closely to the subject about which your executive did me the honor to ask me to write. I can only suggest some ways by which it seems to me our present methods may be improved and developed, may be steadied and strengthened. If we call what we are doing educating nurses, let us really educate; let us make our professional training as liberal as possible, and not merely technical. Let us do this for the honor and dignity and usefulness of our profession, and for the furtherance of any service which the community has a right to expect from us.

I would urge forward every effort to give better and better teaching in our training-schools, and every attempt to test our competency for our profession.

[The discussion which followed Miss Nutting's paper will be given in the next number.—Ed.]

SURGICAL ANÆSTHESIA *

By ALBERT H. MILLER, M.D.

Visiting Anæsthetist to the Rhode Island Hospital, Providence, R. I.

THE object of anæsthesia is to do away with the suffering which formerly attended surgical operations. Incidentally many lives have been saved by lessening the shock to the nervous system and by making possible many operations which could not possibly have been done without the aid of an anæsthetic.

As far back as we can trace the history of medicine efforts have been made to lessen the pain of surgical operations. The ancient Egyptians, Assyrians, and Chinese experimented with drugs producing anodyne effects. The Greeks and Romans seem to have had some success in producing artificial sleep by an infusion of the mandrake in wine. Messer,

* A lecture to the Rhode Island Hospital Nurses